

not limited to fiberglass, high temperature foams, polymer based blanket products and natural fiber based blanket products. In order to reduce the thickness or bulk of the insulator 10, increase its flexibility for ease of installation and also lower production costs, the insert 16 is sized and positioned in the insulator at one or more selected locations only in order to provide shielding of (a) heat sources which produce hot spots requiring extra thermal protection and/or (b) sound transmitting or generating components that are sources of strong sounds which might otherwise annoy the operator and passengers of the vehicle. --

REMARKS

The Applicants have carefully reviewed the Office Action of October 3, 2002, and present this Amendment document in response thereto, along with a Request to extend the original three month response deadline set by the Examiner for two months, or to March 3, 2003.

In response to the formal objection made to page 8 of the specification, a replacement paragraph is submitted to remove the reference to Figures 1 and 2.

Turning now to the substantive issues, Applicant previously explained in response to the first Office Action the manner in which claim 1 very clearly patentably distinguishes over U.S. Patent 5,591,289 to Souders et al. when considered in combination with U.S. Patent 4,985,106 to Nelson. Summarizing the explanation provided, the Souders et al. reference relates to the production of an automobile headliner by means of a compression molding process, but clearly does not teach the step of "forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based

blanket material" as set forth in claim 1. In fact, an insulation insert is *not* provided in the Souders et al. headliner, nor does it explicitly teach the step of cooling the headliner in the molding press to set its molded shape, as claimed. Rather, the reference explicitly teaches removing the assembly from the press and placing it in a fixture that acts as a cooling fixture and a trim nest (see column 6, lines 27-30). Thus, it actually *teaches away* from the invention of claim 1 by teaching the desirability of cooling the assembly *outside* the mold.

With regard to the secondary reference to Nelson, it very clearly fails to provide the teachings missing from the Souders et al. reference that would allow the combination of these two references alone to form an appropriate basis for the rejection of claim 1 on obviousness grounds. More specifically, the Nelson reference strictly relates to an insulator having a flat panel construction and, thus, provides no relevant teaching relating to molding operations. Stated another way, the Nelson reference does not teach the concept of molding an insulator into a desired shape, nor does it suggest that such molding could be done while maintaining the insert in a desired or selected position within the product. Thus, nothing in the Souders et al. and Nelson references would suggest combining their teachings in the manner proposed by the Examiner and arrive at the invention of claim 1.

The Examiner implicitly seems to agree with the proposition advanced in the foregoing paragraph, as evinced by the abandonment of the original rejection of claim 1 on obviousness grounds founded on the "two-way" combination of these references. Instead of then simply acknowledging the lack of any suggestion to combine these references and recognizing the non-obvious nature of the invention of claim 1, the Examiner chooses to cite an additional

“new” reference, U.S. Patent No. 4,131,664 to Flowers et al., in making a tenuous three-way obviousness rejection. However, as outlined in detail in the discussion that follows, this newly cited Flowers et al. reference does not provide, and the Examiner does not otherwise supply, the requisite “objective evidence” of a suggestion to combine its teachings with those of either the Nelson or Souders et al. references (or that would lead one to combine these two references in the first instance) and arrive at the invention of claim 1. Therefore, a *prima facie* case of obviousness is lacking, and the rejection of this claim based on this specious combination of references cannot stand.

Applicant does not contest the Examiner’s finding that the Flowers et al. reference discloses providing a “mold” having “heating/cooling channels.” Applicant also acknowledges that one embodiment of an acoustic panel disclosed in the Flowers et al. reference includes a film layer 64, and further mentions that this layer may be applied at “localized positions” within the panel. However, this reference must do more than simply disclose bits and pieces of the claimed invention that *can be combined* with others in the prior art. Rather, as is well-established in the law, this reference or some other form of objective evidence must actually provide a suggestion or motivation to combine its teachings with those of the other references cited. Otherwise, the *prima facie* case of obviousness is lacking.

The decision of *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) is instructive in this regard. In *Fritch*, the Federal Circuit overturned an Examiner’s determination regarding the obviousness of a claimed invention. In the course of doing so, it explained that:

[o]bviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. . . . *The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.*

Original art

Id. at 1784 (emphasis added). The highlighted point was further emphasized in the more recent decision of *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002), in which the court held that the Board of Patent Appeals and Interferences improperly relied upon “common knowledge and common sense” of a person of ordinary skill in the art to find an invention obvious. Instead, the court emphasized the need for “*objective evidence*” on this point, as opposed to subjective speculation by the Examiner.

Here, the Examiner recites two unrelated and highly speculative bases for combining these three references in the manner proposed. The first basis is that ‘Nelson (‘106) specifically teaches that . . . [an insulation] insert provides for improved vibration dampening, hence providing for an improved fibrous automobile headliner as taught by Souders et al.’’ As summarized above and set forth in great detail in the document filed in response to the first Office Action, the mention in the Nelson reference of the desirability of providing an insulator with improved noise, vibration, and heat insulating capabilities does not “objectively” suggest the desirability of using the insert with the headliner disclosed in the Souders et al. reference.

Stated another way, all the Nelson et al. reference teaches or suggests is using an insert in several specific types of insulators, none of which correspond to one formed by the process set forth in claim 1. Furthermore, nothing in the Souders et al. reference is cited as “teaching or

suggesting" the desirability of using an insert of the type disclosed in the Nelson reference for use in a completely different type of insert (and this combination is actually contraindicated, since the theme of Souders et al. is making the headliner as simple in construction and inexpensive as possible; see, e.g., col. 2, lines 15-19). Simply put, the Examiner does not cite to sufficient "objective" evidence to conclude that a skilled artisan would be motivated to combine the teachings of these two references. Rather, it is the Examiner's speculative, subjective determination using hindsight based on the teachings of Applicant's specification that, had one wanted to "improve" the headliner disclosed in the Souders et al. reference to noise, vibration, and heat, then the obvious choice is to use the insert of the type shown in the Nelson et al. reference in the process as claimed. This leap of logic is simply unsupported by the evidence of record, which means that the obviousness rejection of claim 1 simply cannot stand on this basis alone.

The second, seemingly unrelated basis cited by the Examiner allegedly provides an explanation why a skilled artisan would be motivated to combine the Flowers et al. reference with the other two references (which themselves are not properly combinable) by contending that:

it would have been obvious for one of ordinary skill in the art to have provided a mold having cooling channels as taught by Flowers et al. ('664) to cool the resulting molded structure I [sic in] the mold in the process of Souders et al. ('289) . . . due to a variety of advantages such as, reduced costs by not having an additional cooling station, simplicity of mold design, etc.

[Thus,] in view of the teachings of Flowers et al. ('664) that an insulating insert is applied at localized positions, it would have been obvious for one of ordinary skill in the art to have included an insulation insert as taught by Nelson ('106) in the laminated assembly obtained by the process of Souders et al. ('289),

because Nelson ('106) specifically teaches that such an insert provides for improved vibration dampening, whereas Flowers *et al.* ('664) [teaches] that an insulating insert is applied at localized positions depending on the desired characteristics of the resulting molded article.

All these statements prove is that pieces of the claimed invention are found in three different prior art references. They are wholly devoid of reference to any objective evidence that would suggest making this three-way combination to a skilled artisan.

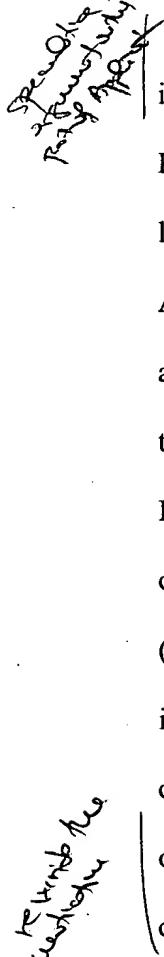
To be sure, the secondary Nelson reference is not properly combinable with the primary Souder *et al.* reference for several reasons, including the fact that it does not disclose, teach, or suggest "molding an insulator," let alone to cause reshaping thereof. In his argument, the Examiner cites to nothing in the Nelson reference or otherwise that would motivate one of ordinary skill in the art to use such an insert in a molded insulator of the type disclosed in the Flowers *et al.* reference. While Flowers *et al.* discloses providing a film layer at selected locations in an acoustic panel, nothing therein suggests combining its teachings with those of the Nelson reference, which again *does not disclose an insulator molded to cause reshaping.*

While the Souders *et al.* and Flowers *et al.* references both admittedly disclose molded insulators, neither suggests the step of "forming an insulation precursor by orienting an insulation insert in a desired location *between a first facing layer and a layer of polymer based blanket material*" and then heating the insulator precursor to soften the polymer binding fiber in the layer of polymer based blanket material, as required in claim 1. Although Flowers *et al.* discloses providing channels in a platen capable of receiving cooling fluid, the Examiner's contention that it would have been obvious to use such channels in the mold

disclosed in the Souder et al. reference ignores the fact that: (1) the claim *expressly requires* "cooling said insulator precursor in said molding press so as to set said insulator precursor in its molded shape," which is contraindicated by this reference; and: (2) neither secondary reference teaches performing this step on a molded insulator precursor having an insulation insert. *Examiner*

As explained briefly above, Souders et al. explicitly teaches removing the assembly from the press and placing it in a fixture that acts as a cooling fixture and a trim nest (see column 6 lines 27-30). Accordingly, the Souders et al. reference actually teaches away from the present invention as set forth in claim. Rather than providing the explicit teaching or suggestion that would lead a skilled artisan to decide to modify the arrangement in the Souders et al. reference to cool an insulator precursor in a mold until it sets, the Flowers et al. reference *does not expressly teach cooling an insulator precursor having an insert in a desired location between a facing and a blanket in a molding press so as to set it in its molded shape*. The Examiner ostensibly assumes that this is the case, since it discloses providing heating and cooling channels in the mold platens. However, the only embodiment discussed with reference to supplying cooling fluid to the channels to cool a molded article (see col. 11, line 36 to col. 12, line 2) is one that does not include the film layer 64, or otherwise mention providing an insulation insert in a desired location, as claimed. Hence, the reference teaches bits and pieces of the invention, but itself does not expressly teach or suggest the combination of the "forming" and "cooling" steps as claimed. Since Souders et al. teaches away from "cooling" in the manner required by the claim and otherwise does not teach the "forming" step

including an insulation insert, and Nelson does not teach forming or cooling in the manner claimed, there is simply no objective basis on which to conclude that a skilled artisan would be motivated to combine the teachings of these three references and arrive at the invention of claim 1.

The Examiner may posit that it is inherent in the Flowers et al. reference that the insulator including the insert would be cooled and set in the mold. However, the Board of Patent Appeals and Interferences has stated that “[i]nherency and obviousness are somewhat like oil and water – they do not mix well.” *Ex parte Schricker*, 56 USPQ2d 1723 (Bd. Pat. App. & Int. 2000) (unpublished). Although not binding precedent, the Board in that decision also held that “when an examiner relies on inherency, it is incumbent on the examiner to point to the ‘page and line’ of the prior art which justifies an inherency theory.” Here, all the Examiner does is point to a passage in a first reference (Flowers et al.) that mentions mold-cooling an acoustical panel unlike the one being claimed, a passage in a second reference (Souder et al.) that mentions an insulator without an insert like the one claimed, and a passage in a third reference (Nelson) disclosing an insulator with an insert, but formed using a completely different technique (i.e., without heating and cooling). What is lacking from any of these references or the record in general is some “objective evidence” of a suggestion to combine their singular teachings and arrive at the invention of claim 1.

Indeed, in view of the crowded nature of the insulator art, it is no surprise that the Examiner is easily able to find all the elements of the claimed invention in different prior art references, since “virtually all [inventions] are combinations of old elements.” *Environmental*



Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 698, 218 U.S.P.Q. (BNA) 865, 870 (Fed. Cir. 1983). However, very few patents would ever issue if a simple showing of the various elements in the prior art was sufficient to negate patentability. This is precisely why the law requires the objective evidence of a suggestion of combining the teachings of the references, and, as demonstrated in the *Fritch* decision, *supra* and its progeny, the requirement is not taken lightly. *See In re Dembicza*k, 175 F.3d 994, 50 USPQ2d 1614 (“the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”). Accordingly, absent some objective evidence of a “teaching or motivation” in one of the cited patents or otherwise of forming a multilayer composite insulator using the process set forth in claim 1, the obviousness rejection is improper and should be withdrawn.

Dependent claims 2-8 are equally allowable for the same reasons. Further, several of these claims include additional limitations that support their allowability. For example, claims 5 and 6 refer to applying pressure to the insulator precursor in the molding press at a level of between approximately 0.5-100.0 psi for between substantially 5-45 seconds. The Examiner cites to U.S. Patent No. 4,418,031 to Doerer et al. in combination with the three references discussed above in making an extraordinary four-way obviousness rejection. However, as emphasized in response to the first Office Action, Doerer et al. explicitly teaches molding at temperatures of about 325°F to 590°F at a pressure of about 200-1000 psi for a mold cycle time of as little as one minute or less. The Doerer et al. reference then goes on to state that the temperature, pressure and time cycle required may be varied depending on the final product

requirements. In distinguishing over this reference in the previous response, Applicant contended that this “varying” of temperature, pressure and time must be read in the context of the ranges explicitly set forth in the Doerer et al. reference (see particularly column 5 lines 42-47), and emphasized that claim 5 of the present application refers to the applying of pressure at a level of between approximately 0.5-100.0 psi, which is from 2 to 2000 times less than that explicitly taught in the Doerer et al. reference while cycle times of less than a minute (between 5-45 seconds) are claimed.

In maintaining the rejection of claims 5 and 6, the Examiner contends that the “molding temperature, pressure and time are result-effective variables,” and cites to the decision of *In re Antoine*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) as supporting the conclusion that this *per se* means that they would be obvious. Rather than support the broad contention made by the Examiner, this decision actually stands for the proposition that *result-effective variables* where the results are unexpectedly good are exceptions to the rule that the discovery of an optimum value of a variable in a *known process* is normally obvious. *Id.* at 8 (“In *In re Aller*, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955), the court set out the rule that the discovery of an optimum value of a variable in a *known process* is normally obvious. *We have found exceptions to this rule in cases where the results of optimizing a variable, which was known to be result effective, were unexpectedly good.*”) (emphasis added). Here, Applicant has provided a convincing line of reasoning as to why the results of using the claimed time and pressure ranges are unexpectedly good: a highly absorptive insulator is produced in a similar or faster time at reduced pressures than those disclosed in the prior art to

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produce the expected results. However, the Examiner seemingly ignores this distinction.

The Examiner also overlooks the fact that the holding of *In re Antoine* specifically relates to the optimization of a variable *in a known process*. In stark contrast, Applicant's process is unknown in the art, as proven by the Examiner's inability to "find" it only by making a specious combination of four references. In other words, unlike the applicant in *In re Antoine* who was merely claiming modifying a well-known process by changing a variable to a particular number (which it is important to note was held patentable nonetheless), Applicant is claiming a novel, non-obvious process, which includes, as per claims 5 and 6, the step of "applying" pressure within a particular range for a particular time.

The present invention as set forth in claims 5 and 6, therefore, represents a distinct improvement over the cited art and provides benefits in reduced production costs long sought by inventors in this field of endeavor. If it had been obvious to the inventors of the Doerer et al. reference that the product could be produced at these reduced pressures within the same or shorter time frame, the Doerer et al. reference would have disclosed the presently claimed processing parameters. This is because one always seeks ways to reduce production costs and increase production speed. Instead, the Doerer et al. reference explicitly discloses different parameters and there is no indication how the presently claimed parameters would be obvious in light of the Doerer et al. reference, which teaches to the contrary.

It should also be appreciated that the magnitude of the difference in the applied pressure is also not within the realm of simple experimentation. Specifically, the presently claimed processing pressures of 0.5-100 psi are between 2 and 2000 times less than the

processing parameters of 200-1000 psi set forth in the Doerer et al. reference. The fact of the matter is the Doerer et al. reference actually teaches away from the present invention.

Moving on, claims 9-13 and 16 very clearly patentably distinguish over U.S. Patent No. 5,976,295 to Ang when considered in combination with the Nelson and Flowers et al. references. The Examiner acknowledges that Ang does not teach the step of forming an insulator precursor by orienting an insulator insert in the desired location between a first facing layer and a layer of a polymer based blanket material. The Nelson reference does teach the concept of providing an insulation insert between layers of an insulation panel, but clearly does not teach preheating all those layers together prior to delivery into a mold. The Examiner now cites to the Flowers et al. reference as disclosing a film layer that may be selectively positioned in an acoustic panel. However, the Examiner fails to explain the manner in which it discloses, teaches, or suggests the claimed preheating and transferring steps. Accordingly, since all limitations of the claim are not taught or suggested in the cited combination of references, a *prima facie* case of obviousness is lacking.

Claims 10-13 which depend from claim 9 and are rejected on the same grounds are equally allowable for the same reasons.

Claim 14 also depends from claim 9 and includes the additional limitation of applying pressure to the insulator precursor for between substantially 5-45 seconds. In rejecting claim 14 the Examiner now cites not only the Ang and Nelson references discussed above, but also both the Doerer et al. and Flowers et al. references. Neither Doerer et al. or Flowers et al. address the shortcomings noted above with respect to the Ang and Nelson references as they

relate to independent claim 9. Specifically, the Doerer et al. reference relates to a molding process wherein the mat is not preheated and then transferred to a mold. Instead, the entire heating of the mat takes place within the mold (see column 5 lines 40-57). The Flowers et al. reference does not teach the “forming,” “preheating,” and “transferring” steps, and the Examiner does not assert otherwise. Accordingly, claim 14 clearly patentably distinguishes over the cited art and should be allowed.

The same logic applies to claims 15 and 16, which also depend from claim 9. As noted above, the Ang reference teaches away from the present invention as claimed. The secondary references to Nelson, Souders et al., and Flowers et al. provide no teaching to overcome this shortcoming of the Ang reference and, therefore, when combined with Ang provide no basis for the proper rejection of these claims. While the Souders et al. reference teaches passing the batting blank 32 of the eventual headliner product through an oven 44 prior to molding, the steps of: (1) forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material, (2) preheating the insulator precursor to a temperature sufficiently high to soften the polymer binding fiber in that blanket material; and (3) transferring the preheated insulator precursor to a molding press while the fibers remain soft are clearly not taught. Dropping the Doerer et al. reference from the calculus and instead citing the Flowers et al. reference does nothing to alter this fact. Moreover, the Examiner’s statement that the references are properly combinable because all “teach similar end-product, material and processes” is insufficient objective evidence of a suggestion or motivation to warrant combining them. Accordingly, the

patentability of these claims is clearly established.

Turning to claim 17, the Examiner makes a four-way obviousness rejection, citing Souders et al. as the primary reference with Nelson, Flowers et al. and Nozimo et al. as secondary references. The primary reference to Souders et al. does not teach or suggest the forming of an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material as set forth in claim 17. Further, the primary reference to Souder et al. does not teach or suggest the closing of the insulator precursor in a molding press and the crimping of the at least one selected area of the insulation precursor such that the polymer binding fibers in that at least one selected area are the only polymer binding fibers heated sufficiently to soften during the molding process.

None of the secondary references cited by the Examiner fully address the shortcomings of the primary reference. As noted above, the Nelson reference does disclose an insulation panel having an insulation insert in a desired location, but does not disclose that this panel is subsequently molded into any desired shape as set forth in claim 17, nor does Nelson in any way teach or suggest that this would be possible while maintaining the insert in the desired position within the insulator precursor.

The Flowers et al. reference discloses one embodiment of an acoustic panel having a film layer 64 and notes that this layer may be “localized” within the panel. However, the reference does not disclose, teach, or even remotely suggest the closing of the insulator precursor in a molding press where the polymer binding fibers in at least one selected area are the only polymer binding fibers heated sufficiently to soften during the molding process.

Thus, other than disclosing that acoustic panels may be molded, it is no more relevant to the invention of claim 17 than the Nelson reference.

U.S. Patent No. 5,366,678 to Nomizo et al. is cited for its disclosure of a compression molding process wherein a thermofusible fibrous blank is inserted into the mold and heat and pressure are applied to a specific region so that the region melts and hardness and density are increased in the region. It should be appreciated that the Nomizo et al. reference relates to the production of cushioning material for seat pads requiring processing times of 60 to 80 minutes or more (see example 1). As such, the teachings of the Nomizo et al. reference are not particularly relevant to the production of insulation materials where speed of production and cycle times are critical to produce a commercial product at a reasonable cost. It should also be appreciated that the Nomizo et al. reference does not teach in any respect the orienting of an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material. It is therefore clear that claim 17 patentably distinguishes over the cited prior art of record. This is also true of claims 18-20, 23 and 24 which depend from claim 17 and were rejected on the same grounds.

Claims 21 and 22 depend from claim 17 and recite, respectively, the steps of applying pressure to the precursor at a level of between approximately 0.5-100.0 psi and compressing the precursor for substantially 5-45 seconds. Such processing parameters in combination with the steps of claim 17 (again, an "unknown" process) are neither taught nor suggested in the Souders et al., Nelson, Flowers et al., and Nomizo references. Recognizing this failing, the Examiner cites the Doerer et al. reference. However, as noted above, it teaches applying a

pressure of approximately 200-1000 psi during processing, which is from 2 to 2000 times greater than the pressure range set forth in claim 21. Accordingly, whether considered singularly or in combination, the Souders et al., Nelson, Flowers et al., Nomizo et al. and Doerer et al. references fail to provide an appropriate basis for rejection of claims 21 and 22 under 35 USC § 103 and, accordingly, these claims should be allowed.

Claim 34 is also rejected over the combination of Souders et al, Nelson, Flowers et al. and Nomizo et al. The primary reference to Souders et al. does not teach or suggest: (1) forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of a polymer based blanket material including polymer binding fibers; and (2) molding said insulator precursor into a desired shape by (a) heating said insulator precursor; (b) applying pressure to said insulator precursor; (c) softening only those polymer binding fibers present in at least one selected area of said polymer based blanket material; and (d) crimping said at least one selected area.

None of the secondary references cited by the Examiner fully address the shortcomings of the primary reference. As noted above, the Nelson reference does disclose an insulation panel having an insulation insert in a desired location, but does not disclose that this panel is subsequently molded into any desired shape as set forth in claim 34, nor does Nelson in any way teach or suggest that this would be possible while maintaining the insert in the desired position within the insulator precursor.

The Flowers et al. reference discloses an embodiment of an acoustic panel that may include a film layer 64, and notes that it may be selectively positioned. However, it does not

disclose, teach, or even remotely suggest the closing of the insulator precursor in a molding press and the crimping of the at least one selected area of the insulation precursor where the polymer binding fibers in that at least one selected area are the only polymer binding fibers heated sufficiently to soften during the molding process. Thus, other than disclosing that panels may be molded, it is no more relevant to the invention of claim 34 than the Nelson reference.

Finally, Nomizo et al. does not teach in any respect the orienting of an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material. It is therefore clear that claim 34 patentably distinguishes over the cited prior art of record.

In summary, all the pending claims patentably distinguish over the prior art and are in condition for formal allowance. Upon careful review and consideration it is believed the Examiner will agree with this proposition. Accordingly, the early issuance of a formal Notice of Allowance is earnestly solicited.

If any fees are required pertaining to this response, the Applicants request that they be charged to Deposit Account number 50-0568.

Respectfully submitted,

OWENS CORNING



Stephen W. Barns
Reg. No. 38,037

Date: 7 Mar 2003

Owens Corning
Patent Dept., Bldg. 54
2790 Columbus Road
Granville, Ohio 43023
(740) 321-7162

Docket No. 599-013

Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application :
JEFFREY A. TILTON :
Ser. No. 09/607,268 : Examiner: Staicovici, Stefan
Filed: June 30, 2000 : Group Art Unit: 8605
For: PROCESS FOR FORMING COMPOSITE INSULATOR

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please replace the paragraph on page 8 beginning with "The insulation insert 16" with the following:

-- The insulation insert 16 is provided to furnish extra thermal and/or acoustical insulation over sources of high heat and/or high sound commonly associated with various operating systems of the vehicle [(note positioning of insert 16 adjacent heat/sound source H shown in Figures 1 and 2)]. Materials that may be used for the insert 16 include but are not limited to fiberglass, high temperature foams, polymer based blanket products and natural fiber based blanket products. In order to reduce the thickness or bulk of the insulator 10, increase its flexibility for ease of installation and also lower production costs, the insert 16 is sized and

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positioned in the insulator at one or more selected locations only in order to provide shielding of (a) heat sources which produce hot spots requiring extra thermal protection and/or (b) sound transmitting or generating components that are sources of strong sounds which might otherwise annoy the operator and passengers of the vehicle. --